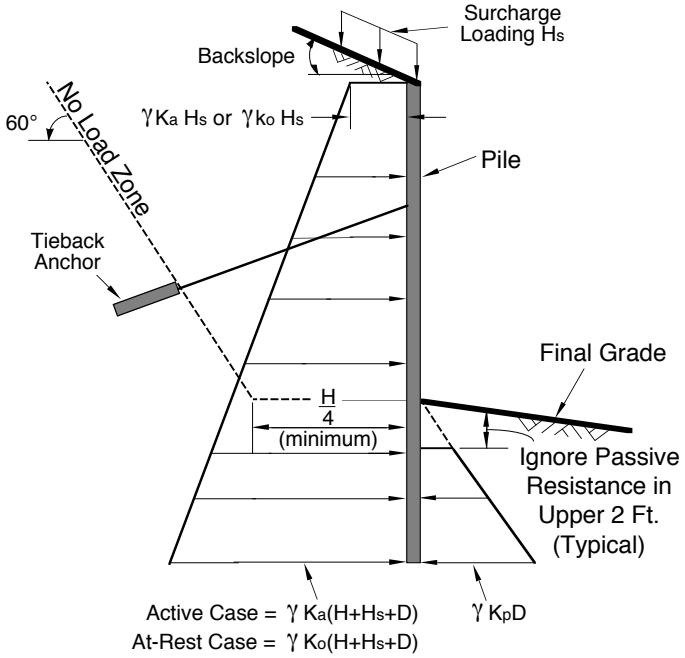
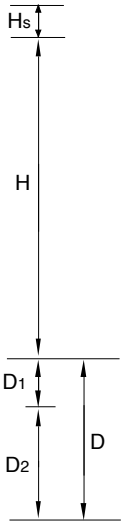
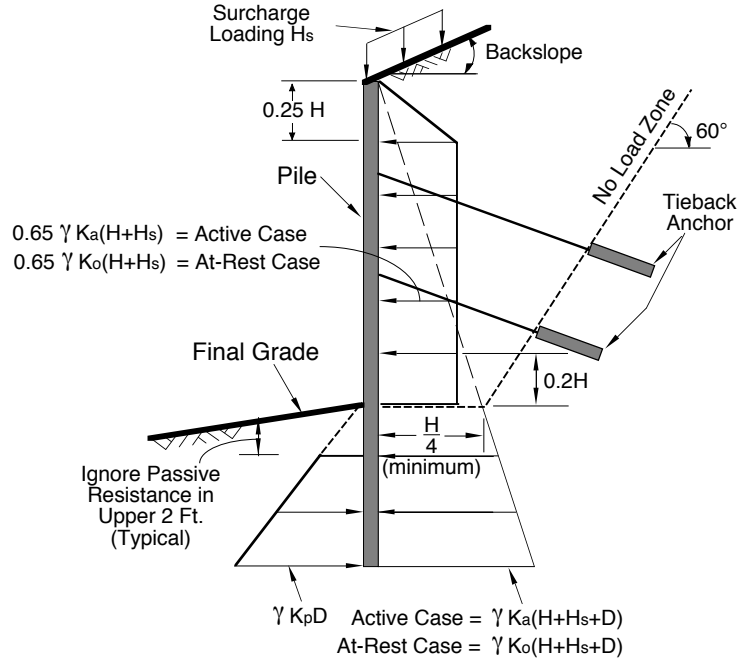
Typical Earth Pressures for Cantilever and Single Tieback Wall





Typical Earth Pressures for Multiple Tieback Wall



NOTES

1. This figure is not for construction. It should only be used for information pertaining to potential design concepts. Final design should be based on site-specific conditions and accomplished by a geotechnical engineer licensed as a professional engineer.
2. Wall Embedment (D) should satisfy both force and moment equilibrium. The minimum embedment should be based on the site conditions.
3. The pressure diagrams shown are based on uniform soil conditions. Typically, piles are embedded in dense soil. For this case, the active pressure can be reduced accordingly in the dense soils.
4. These typical pressure diagrams are based on a continuous wall system. If soldier piles with lagging are used, apply active pressure over the width of the soldier piles below the lagging and apply passive resistances over twice the width of the piles or the spacing of the piles, whichever is smaller.
5. The passive pressure should include a factor of safety of 1.5 to reduce wall deflection.
6. Free drainage assumed behind the wall.
7. For lagging design, the above design pressures can be reduced for soil arching.
8. Determine allowable vertical pile capacity for piles backfilled with lean concrete using: Skin Friction = f_s; End Bearing = q_p
9. The no load zone should also include any soil above any potential slide surface.

LEGEND

H = Excavation Height (Ft.)
Hs = Equivalent Surcharge Height (Ft.)
D, D1, D2 = Embedment Depths (Ft.)
Ka = Active Earth Pressure Coefficient
Ko = At-Rest Pressure Coefficient
Kp = Passive Earth Pressure Coefficient
γ = Unit Weight of Soil

Seattle Landslide Study
Seattle Public Utilities
Seattle, Washington

TYPICAL SOLDIER PILE WALL DESIGN CRITERIA

July 1999 W-7992-01

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. 2-12
Sheet 1 of 3

FIG. 2-12
Sheet 1 of 3